December 17, 2010

Ms. Becca Conklin
Washington Department of Ecology
Surface Water Quality Standards
P.O. Box 47600
Olympia, WA 98504-7600

Re: Surface Water Quality Standards Triennial Review

Dear Ms. Conklin:

I am writing on behalf of Avista Corporation (Avista) to propose changes to Washington's water quality standards as part of Ecology's Surface Water Quality Standards Triennial Review (Triennial Review), conducted every three years pursuant to the Clean Water Act (CWA). 40 CFR 131.20(a). We appreciate this opportunity to provide you with our recommendations, which are based primarily on our experience in obtaining certification under Section 401 of the CWA as part of the relicensing of our Spokane River Hydroelectric Project. While Avista is fully committed to implementing that certification, the Triennial Review presents an opportunity to significantly improve the effectiveness of Washington's water quality standards, both as applied to hydroelectric facilities and more generally.

The overall purpose of our recommendations is to focus water quality improvement efforts on those waters that provide important habitat for fish and other aquatic species, and to ensure that the dissolved oxygen (DO), temperature, and total dissolved gas (TDG) levels applicable to those waters be based on the best available science. We particularly agree with Ecology's statement in its Triennial Review informational materials that it will prioritize issues raised by the public based on, among other things, "expected environmental benefits and costs." More specifically, we agree with Ecology's statement that it should complete "Work left from the last Standards approval in 2006: -- Gathering new data from tribes and WA Fish and Wildlife to update where fish uses occur." New information provided by other entities should also be considered in Ecology's prioritization and evaluation process.

Before describing our specific recommendations, we would like to make one broad observation. As the science of water quality advances, Ecology should consider a fundamental shift in the way it sets water quality standards. The water bodies of Washington State vary dramatically in terms of climate, seasonality, stratification, hydrology, and ecological function. In turn, baseline parameters, such as pH, dissolved oxygen, temperature, and nutrients, respond differently to each combination of these conditions. Consequently, applying numeric water quality criteria on a "one-size-fits-all" basis is an imprecise method that does not necessarily support all beneficial

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uses of specific water bodies. Furthermore, it may result in numeric criteria that are unnecessarily stringent and/or unachievable. In those instances, the path forward becomes one complex, time-consuming regulatory hurdles, such as UAAs and site-specific criteria that only consume the resources of both Ecology and the regulated community.

In years past, a "one-size-fits-all" approach was perhaps the best we could do, but that is no longer the case. We now have the scientific capacity for better management of varied and dynamic water bodies. Many states, including Alaska, Idaho, Oregon, Colorado, Illinois, Maine, Nebraska, and Pennsylvania have begun to recognize these differences in water body behavior and have adapted their water quality standards to more effectively manage a wide range of water body types. They have determined that beneficial uses are best served by closely examining the scientific data and adjusting compliance requirements to support beneficial uses. We urge Ecology to accommodate specific classifications for particular water bodies, based on a thorough scientific examination of that specific water body and its beneficial uses.

Perhaps counter-intuitively, this approach to setting water quality standards is not likely to increase the administrative burden on Ecology. First, the time spent upfront on creating classifications for specific water bodies is likely to more than offset the huge time commitments that otherwise will be necessary to administer the resulting UAA, site-specific criteria or variance proceedings. There is likely to be a surge of these proceedings in the coming years, swamping Ecology's limited resources unless steps are taken to avert at least some of them through proactive regulatory reforms. Second, in many cases it is likely that the affected regulated community would be willing either to conduct or to help fund the necessary scientific research, subject to Ecology oversight. Once the scientific research is submitted, Ecology would exercise its discretion to create specific water quality standards for the water bodies, or to determine that deviations from the existing "one–size-fits-all" water quality standards are not appropriate.

Flexible and Technically Rigorous Treatment of Numeric Water Quality Standards for Varied and Complex Water Bodies

Avista proposes the following four specific changes to Washington's water quality standards as part of Ecology's Triennial Review.

1. **<u>Dissolved Oxygen Criteria</u>**

(a) Ecology Should More Closely Align its Numeric DO Criteria with Other Northwest States and Tribes

The Triennial Review informational materials include a table comparing the DO numeric criteria adopted by various states and tribes of the Pacific Northwest, as well as British Columbia. This table strikingly shows that Washington State and the Makah Tribe are the only governments in the region that have adopted a 1-day minimum of 9.5 mg/L. The other nine governments listed range from 9.0 mg/L down to 6.0 mg/L. Unless the fish and aquatic life of eastern Washington State have demonstrably greater DO needs than their counterparts across the border in Idaho (where the criteria is 6.0 mg/L), this strongly suggests that the Washington number is unnecessarily high.

To help us better understand the scientific basis for Washington's 9.5 mg/L DO criterion and why it differs from the standards adopted by other Northwest states and tribes, we would like to review the scientific studies and other information that Ecology relies upon in support of its criterion. We would appreciate it if Ecology would identify those studies and other information in its responsive summary. Unless there is a sound scientific basis for applying 9.5 mg/L in the waters of Washington State, we recommend that Ecology lower its numeric DO criteria to more closely align with DO criteria that are considered protective by other Northwest states and tribes.

(b) Ecology Should Apply Only Narrative DO Criteria to the Hypolimnion, Based on More Flexible Yet Scientifically Rigorous Analysis

Washington should join Alaska, Idaho, Oregon, Colorado, Illinois, Maine, Nebraska, and Pennsylvania in applying more scientifically rigorous and water body-specific DO criteria to stratified water bodies. This diverse cross-section of states applies a more flexible analysis because it is not feasible or necessary to have the same DO requirements in all layers of a stratified water body to be biologically protective of fish and aquatic life and achieve agency management objectives.

During the summer and early fall, reservoirs stratify in much the same way as any natural lake of the same size, depth, and shape. When that occurs, the hypolimnion and epilimnion (lower and upper layers, respectively) become thermally separated by the metalimnion (middle layer). Typically, DO levels below the metalimnion are lower than those in the epilimnion, but still provide for the natural ecological functions of the lake or reservoir. As an example, Ecology's final Spokane River DO TMDL cites ***no evidence*** that fish and other aquatic species in Lake Spokane are being impaired in any way by low levels of DO, much less that impairment occurs in the hypolimnion during the late summer and early fall.[1] By substituting narrative criteria for numeric criteria in waters in the hypolimnion, Ecology would be adopting a common sense approach that has the full support of EPA. Other states, including Colorado, Illinois, Idaho and others are examining more refined approaches to stratified water bodies.

Illinois' more refined approach was approved by EPA in December, 2008 (copy attached). Prior to that time, Illinois applied the same numeric DO criteria to all waters on a year-round basis –

[1] To the contrary, Lake Spokane is the site of several bass fishing tournaments each summer. In addition, the FERC License requires Avista to annually stock 155,000 catchable-sized sterile rainbow trout in Lake Spokane for a minimum of five years. FERC License, Article 406, at 85. This requirement is based on a recommendation by the Washington Department of Fish and Wildlife (WDFW), which stated that "Upper Falls, Nine Mile, and Lake Spokane reservoirs all offer littoral and limnetic habitats that are favorable to producing rainbow trout fisheries." WDFW, Comments on the Draft Environmental Impact Statement for FERC Projects P-2545 (Spokane River Developments) and P-12606 (Post Falls Project) and Modified Recommendations for Terms and Conditions, March 6, 2007 at 26. Certainly WDFW would not recommend stocking fish that had reduced changes of survival due to low DO in the hypolimnion.

not less than 6.0 mg/L during at least 16 hours of any 24 hour period, nor less than 5.0 mg/L at any time. As part of its 2008 amendments, however, Illinois created new spatial and temporal[2] distinctions in its standards.

In terms of space, Illinois defined "quiescent and isolated sectors" of General use waters as "including but not limited to wetlands, sloughs, backwaters ***and waters below the thermocline in lakes and reservoirs"*** and required that such sectors *"must be maintained at sufficient dissolved oxygen concentrations* ***to support their natural ecological functions and resident aquatic communities."*** (Emphasis added.). In other words, quiescent and isolated sectors of General use waters are not subject to any numeric criteria; instead, they are subject only to narrative criteria.

This distinction was approved by EPA. Specifically, EPA concluded that "Illinois' revised DO criteria do not affect the designated uses of Illinois surface waters and the criteria protect fish and aquatic life consistent with 101(a)(2) of the CWA," and that the "revised criteria are at least as protective as EPA's recommended criteria for DO for protecting fish and aquatic life" (See attached copy referenced above).

2. Total Dissolved Gas (TDG) Criteria

Reform of the TDG numeric criteria is long overdue. As we stated in our March 7, 2003 comment letter on the 2003 Proposed Surface Water Quality Standards rule revision, we encourage Ecology to support ongoing review of best available information regarding the TDG standard, and to engage EPA in dialogue regarding the potential for revisions to the standard.

Data reviewed by Ecology for the special conditions applied for fish passage on the Columbia and Snake Rivers, as well as research related to Avista's two hydroelectric projects on the Clark Fork River in Montana and Idaho, strongly suggest that the current standard may be too conservative. These indicate that TDG levels of 115% to 120% have a minimal, if any, effect on fish that are not contained in laboratories, and that are free to move up or down within the water column. Links to the referenced data and associated literature research are as follows:

- Ecology. January 2009. Adaptive Management Team Total Dissolved Gas in the Columbia and Snake Rivers. Publication No. 09-10-002. (http://www.ecy.wa.gov/pubs/0910002.pdf);
- Ecology. July 2008. Evaluation of Total Dissolved Gas Criteria (TDG) Biological Effects Research, A literature review. Publication No. 08-10-059. (http://www.ecy.wa.gov/pubs/0810059.pdf);
- Weitkamp, D. E. June 2008. Total Dissolved Gas Supersaturation Biological Effects, Review of Literature 1980-2007. (http://www.parametrix.com/profile/technicalresources.htm); and

[2] In terms of time, Illinois divided the year into two periods, March through July, and August through February, and established significantly lower DO numeric criteria for General Use waters during the latter period.

- Weitkamp, D.E., R.D. Sullivan, T. Swant and J. DosSantos. 2003. Gas Bubble Disease in Resident Fish of the Lower Clark Fork River. Transactions of the American Fisheries Society, Volume 132(5): 865-876 (http://afsjournals.org/doi/abs/10.1577/T02-026).

We would be happy to provide you with copies of any of these publications at your request.

3. Temperature Criteria

Numeric temperature criteria are another example of the need to consider regional climatic differences within the State. Washington is geographically diverse, and climate varies greatly between the east and west sides of the State. To hold all water bodies to identical numeric temperature criteria is not reasonable, nor will it result in better water quality. It defies logic to hold a shallow stream, a hydroelectric reservoir and a deep mountain lake to the same temperature standards. Again, a "one-size-fits-all" approach will not result in better quality standards, but only in unattainable standards.

4. The Definition of "Dominant Aquatic Habitat" Should be Clarified

The definition of "dominant aquatic habitat" should be clarified. The relevant regulations require that DO levels be measured in the dominant aquatic habitat of the water body. As stated in WAC 173-201A-200(1)(d)(iv):

> (iv) DO measurements should be taken to represent the ***dominant aquatic habitat*** of the monitoring site. This typically means samples should:
>
> (A) Be taken from well mixed portions of rivers and streams; and
>
> (B) Not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.

(Emphasis added.) However, for example, the Spokane River DO TMDL makes no mention of the dominant aquatic habitat of Lake Spokane. More importantly, the monitoring points identified in the Spokane River DO TMDL do not, in fact, represent the dominant aquatic habitat of the lake.

In its April 7, 2010 response to the points raised by Avista in the dispute resolution process regarding the Spokane River DO TMDL, Ecology stated that:

> This language does not indicate that the standard only applies in the dominant aquatic habitat. Rather, the section of the standards that refers to dominant aquatic habitat is in the section describing where measurements for dissolved oxygen should be taken to ensure that areas most likely to have fish use are not missed when sampling. This is a separate issue from assessing an impairment or determining whether a numeric standard has been met.

We acknowledge that the reference to dominant aquatic habitat is in the context of DO measurements, but disagree that measurement is a separate issue from assessing an impairment or determining whether a numeric standard has been met. Rather, they are one and the same, and our interpretation of this regulation directs Ecology to take measurements in the dominant aquatic habitat. It also specifies that measurements should typically ***not*** be taken outside of the dominant aquatic habitat, such as in shallow stagnant backwaters. To make this clearer, subparagraph (B) above should be amended as follows: "Not be taken from shallow stagnant backwater areas or waters below the thermocline in lakes and reservoirs, within isolated thermal refuges, at the surface, or at the water's edge." This would also make WAC 173-201A-200(1)(d)(iv) consistent with our additional recommendations pertaining to the DO standards above.

We appreciate your consideration of our recommendations. Please feel free to call me at (509) 495-4998 if you have any questions regarding the content of this letter.

Sincerely,

Speed Fitzhugh

Elvin "Speed" Fitzhugh
Spokane River License Manager

Attachments (2)

ATTACHMENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 18 2008

REPLY TO THE ATTENTION OF:
WQ-16J

Marcia T. Willhite, Chief
Bureau of Water
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, Illinois 62974-9276

Dear Ms. Willhite:

On October 20, 2008, U.S. Environmental Protection Agency received legal certification from Illinois' Attorney's General Office regarding the adoption of revised water quality standards for dissolved oxygen at 35 Ill. Adm. Code 302.206. Receipt of this certification, in addition to the previously submitted documentation received on May 12, 2008, completed the requirements of 40 CFR 131.6 (Minimum requirements for water quality standards submissions).

EPA is required to review and approve new and revised state water quality standards under section 303(c)(3)of the Clean Water Act (CWA) and federal regulations at 40 CFR 131.21 prior to becoming effective. EPA has reviewed the information submitted in support of the revised rules and hereby approves Illinois' revised dissolved oxygen water quality standards at 35 Ill. Adm. Code 302.206.

Consistent with section 7 of the Endangered Species Act (ESA) and federal regulations at 50 CFR Part 402, EPA is required to consult with U.S. Fish and Wildlife Service (FWS) on any action that may affect federally-listed threatened and endangered species. Pursuant to the "Memorandum of Agreement between the EPA and the Services regarding enhanced coordination under the Clean Water Act and Endangered Species Act" (the MOA) governing consultation with FWS, EPA is deferring consultation on Illinois's revised dissolved oxygen criteria to the national ESA consultation. EPA has determined that this approval action does not violate section 7(d) of the ESA, which prohibits irreversible or irretrievable commitments of resources that have the effect of foreclosing the formulation or implementation of reasonable and prudent alternatives, and has included in the record the basis for the conclusion that there are not expected to be any impacts of concern during the interim period until the national consultation is completed.

If you have any questions, please contact me at (312) 353-2147 or Eric Brossman of my staff at (312) 886-0233, or brossman.eric@epa.gov.

Sincerely,

Timothy C. Henry
Acting Director, Water Division

cc: Richard Nelson, USFWS, Rock Island Field Office
Sanjay Sofat, Illinois EPA
Bob Mosher, Illinois EPA

EPA'S RATIONALE FOR APPROVAL OF AMENDMENTS TO THE EXISTING ILLINOIS POLLUTION CONTROL BOARD REGULATION, 35 ILL. ADM. CODE 302.206, REVISED WATER QUALITY CRITERIA FOR DISSOLVED OXYGEN.

DATE: DEC 18 2008

I. INTRODUCTION

On May 9, 2008, the Illinois Environmental Protection Agency (Illinois EPA) submitted revisions to Illinois' water quality standards (WQS) for dissolved oxygen (DO) to U.S. Environmental Protection Agency for review and approval. EPA received the submittal on May 12, 2008. On October 21, 2008, EPA received a letter from the Illinois Attorney General certifying that the rulemaking met all State legal requirements. This certification completed the requirements of State WQS submissions as specified in 40 CFR 131.21 and section 303(c) of the Clean Water Act (CWA).

This review documents the basis for EPA's approval of Illinois' revised DO standards for consistency with the CWA and federal regulations, and compliance with section 7 of the Endangered Species Act (ESA).

II. SUMMARY OF SUBMITTED WQS RULE REVISIONS

A. Description of rule revisions

Illinois' current criteria states that DO shall not be less than 6.0 mg/l during at least 16 hours of any 24 hour period, nor less than 5.0 mg/l at any time and apply to all General Use waters The specific language being added to the Illinois rules is shown below:

> General use waters must maintain dissolved oxygen concentrations at or above the values contained in subsections (a), (b) and (c) of this Section. ~~Dissolved oxygen (STORET number 00300) shall not be less than 6.0 mg/L during at least 16 hours of any 24 hour period, nor less than 5.0 mg/L at any time.~~
>
> a) General use waters at all locations must maintain sufficient dissolved oxygen concentrations to prevent offensive conditions as required in Section 302.203 of this Part. Quiescent and isolated sectors of General Use waters including but not limited to wetlands, sloughs, backwaters and waters below the thermocline in lakes and reservoirs must be maintained at sufficient dissolved oxygen concentrations to support their natural ecological functions and resident aquatic communities.
>
> b) Except in those waters identified in Appendix D of this Part, the dissolved oxygen concentration in the main body of all streams, in the water above the thermocline of thermally stratified lakes and reservoirs, and in the entire water column of unstratified lakes and reservoirs must not be less than the following:

1) During the period of March through July,

A) 5.0 mg/L at any time; and

B) 6.0 mg/L as a daily mean averaged over 7 days.

2) During the period of August through February,

A) 3.5 mg/L at any time;

B) 4.0 mg/L as a daily minimum averaged over 7 days; and

C) 5.5 mg/L as a daily mean averaged over 30 days.

c) The dissolved oxygen concentration in all sectors within the main body of all streams identified as "enhanced waters" must not be less than:

1) During the period of March through July,

A) 5.0 mg/L at any time; and

B) 6.25 mg/L as a daily mean averaged over 7 days.

2) During the period of August through February,

A) 4.0 mg/L at any time;

B) 4.5 mg/L as a daily minimum averaged over 7 days; and

C) 6.0 mg/L as a daily mean averaged over 30 days.

d) Assessing attainment of dissolved oxygen mean and minimum values.

1) Daily mean is the arithmetic mean of dissolved oxygen concentrations in 24 consecutive hours.

2) Daily minimum is the minimum dissolved oxygen concentration in 24 consecutive hours.

3) The measurements of dissolved oxygen used to determine attainment or lack of attainment with any of the dissolved oxygen standards in this Section must assure daily minima and daily means that represent the true daily minima and daily means.

4) The dissolved oxygen concentrations used to determine a daily mean or daily minimum should not exceed the air-equilibrated concentration.

5) "Daily minimum averaged over 7 days" means the arithmetic mean of daily minimum dissolved oxygen concentrations in 7 consecutive 24-hour periods.

6) "Daily mean averaged over 7 days" means the arithmetic mean of daily mean dissolved oxygen concentrations in 7 consecutive 24-hour periods.

7) "Daily mean averaged over 30 days" means ~~is~~ the arithmetic mean of daily mean dissolved oxygen concentrations in 30 consecutive 24-hour periods.

B. Area affected

The proposed changes to the WQS regarding DO shall be applied to all general use water bodies in the State of Illinois with special consideration to waters identified for enhanced DO protection. Illinois EPA developed the narrative criteria that apply to quiescent and isolated sectors of General Use waters including but not limited to wetlands, sloughs, backwaters and waters below the thermocline in lakes and reservoirs.

C. Rule development and submittal history

The Illinois Association of Wastewater Agencies (IAWA) initially proposed the amendment to the existing Illinois Pollution Control Board (IPCB) regulation, 35 Adm. Code 302.206 on April 19, 2004. The IPCB held five public hearings over six days in the rulemaking:

June 29, 2004, in Chicago, IL
August 12, 2004, in Springfield, IL
August 25, 2005, in Chicago, IL
April 25, 2006, in Springfield, IL
November 2-3, 2006, in Springfield, IL

IPCB adopted the amendment on January 24, 2008, with an effective date of January 28, 2008. Over the course of these hearings, over 100 public comments were made. A list of these public comments can be found in Appendix II of the Final Order of the Illinois Pollution Control Board In the Matter of Proposed Amendments to Dissolved Oxygen Standard 35 Ill. Adm. Code 302.206. These comments were considered by the IPCB in its adoption of the revised DO criteria for Illinois.

III. EPA'S REVIEW FOR CONSISTENCY WITH THE CWA AND FEDERAL REGULATIONS

A. CWA Section 303(c)/40CFR131 Requirements

WQS requirements of CWA section 303(c) are implemented through federal regulations according to 40 CFR 131. The requirements set forth in 40 CFR 131.21 state that EPA is to review and approve/disapprove state-adopted water quality standards. Based on the requirements of 40 CFR 131.5, EPA considers the following:

- whether state-adopted uses are consistent with those set in the CWA;
- whether the state's adopted criteria are protective of the adopted uses;
- whether the state has followed the necessary legal procedures for revising its standards;
- whether these standards are based on appropriate, scientifically defensible, data and analyses; and
- whether the state's submission includes certain basic elements as specified in 40 CFR 131.6.

B. Review of Submission for Completeness

Table 1, Comparison of 40 CFR 131.6 and Illinois' Submittal

Federal Requirements for a State WQS submittal (40 CFR §131.6)	**Revised Illinois Dissolved Oxygen Standards Submittal**
Use designations consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the CWA	Illinois' revised DO criteria do not affect the designated uses of Illinois surface waters and the criteria protect fish and aquatic life consistent with 101(a)(2) of the CWA.
Methods used and analyses conducted to support water quality standards revisions	The procedures for deriving dissolved oxygen criteria are outlined in Illinois EPA's submittal which included EPA's 1986 Criteria Document[1].
Water quality criteria sufficient to protect the designated uses	The revised criteria are all at least as protective as EPA's recommended criteria for DO for protecting fish and aquatic life.
Antidegradation policy consistent with § 131.12	This action will not affect Illinois' existing antidegradation policy.
Certification by the State Attorney General or other appropriate legal authority within the State that the water quality standards were duly adopted pursuant to State law	October 20, 2008 letter received by Region 5 EPA on October 21, 2008 from Matthew J. Dunn, Chief of Environmental Enforcement for the Illinois Attorney General's Office.

[1] U.S. Environmental Protection Agency. 1986. Ambient water quality criteria for dissolved oxygen. EPA/440/5-86-003.

Federal Requirements for a State WQS submittal (40 CFR §131.6)	Revised Illinois Dissolved Oxygen Standards Submittal
General information to aid EPA in determining the adequacy of the scientific basis of the standards that do not include the uses specified in section 101(a)(2) of the CWA as well as information on general policies applicable to State standards which may affect their application and implementation	Illinois' revised criteria are based on EPA's 1986 Criteria Document along with other supporting material included in the State's May 9, 2008 submittal.

C. Technical Review of Submission

1. Consistency of Illinois' revised DO Standards with EPA's 304(a) recommendations:

Table 2, Comparison of Illinois' Revised DO Standards to EPA's 304(a) Recommendations (EPA's 1986 Criteria Document):

Time Period	Minimum	7-day mean minimum	7 day mean	30 day mean
Early Life Stages (warmwater)				
EPA	5.0		6.0	
Illinois March through July	5.0		6.0	
Other Life Stages (warmwater)				
EPA	3.0	4.0		5.5
Illinois August through February	3.5	4.0		5.5
Early Life Stages (coldwater)				
EPA	5.0		6.5	
Early Life Stages (warmwater)				
EPA	5.0		6.0	
Early Life Stages (Enhanced Dissolved Oxygen Protection)				
Illinois March through July	5.0		6.25	
Other Life Stages (coldwater)				
EPA	4.0	5.0		6.5
Other Life Stages (warmwater)				
EPA	3.0	4.0		5.5
Other Life Stages (Enhanced Dissolved Oxygen Protection)				
Illinois August through February	4.0	4.5		6.0

Table 3, Comparison of Illinois' Revised DO Standards to Other Technical Recommendations from EPA's 304(a) Guidance:

EPA Recommendations	Illinois' DO Standard
EPA recommends having different criteria that are more protective during the presence "early life stages" and is different from "other life stages".	Illinois has chosen the months March through July as the presence of "early life stages". August through February is the absence of "early life stages" and the presence of "other life stages".
EPA recommends having criteria protective of more sensitive species. Some species may require more protection than that afforded by warmwater criteria (EPA's 1986 Criteria Document).	Illinois has designated "enhanced waters" which represent approximately 8% of general use stream miles. They have been chosen based on the presence of significant amounts of DO sensitive aquatic life.
EPA has included a daily minimum to make certain that no acute mortality of species occurs as a result of lack of oxygen. The criteria are designed to prevent significant episodes of continuous or recurring episodes of DO levels at or near the lethal threshold. The minima should be considered as instantaneous concentrations that should be achieved at all times (EPA's 1986 Criteria Document).	Illinois has adopted the recommendations from EPA's 1986 Criteria Document for a daily minimum, weekly minimum mean, and monthly minimum mean.

2. Evaluation of differences between Illinois' DO standard and EPA's 304(a) guidance:

- Illinois' daily minimum DO criterion for life stages other than early life stages:

Illinois' minimum DO criterion to protect warmwater aquatic life when early life stages are not present is 3.5 mg/L. EPA's applicable 304(a) recommendation is 3.0 mg/L. Illinois' criterion is more stringent than EPA's recommendation.

- Illinois' protection of DO sensitive species

EPA's 304(a) guidance on DO recommends including criteria that are more stringent than EPA's recommended criteria for waters where DO-sensitive species are present. Illinois addressed this recommendation by using its monitoring data to identify species associated with higher DO levels and identifying specific waters with more stringent DO requirements based on the presence of these species. The enhanced waters DO criteria applicable to these waters were developed by using DO concentrations that were intermediate between EPA's 1986 Criteria Document warmwater and coldwater criteria. Given the fact that EPA's 304(a) guidance on DO (EPA's 1986 Criteria Document) lacks technical recommendations on how to protect DO-sensitive species, Illinois's DO standards are consistent with the recommendation to provide additional protection.

- Illinois' narrative criteria to protect quiescent waters (wetlands, and lakes below the thermocline)

Illinois' revised DO standard includes narrative criteria to quiescent and isolated sectors of general use waters, such as wetlands and waters below the thermocline in lakes. The criteria require sufficient DO concentrations to support their natural ecological functions and resident aquatic communities. EPA does not have specific technical recommendations on how to protect these waters. Illinois' narrative criterion provides sufficient authority for Illinois to protect the aquatic life uses of these waters.

D. Conclusion of EPA's Review

Illinois' revision of WQS for DO at 35 Ill. Adm. Code 302.206, adopted January 28, 2008, is consistent with section 303(c) of the CWA and federal regulations at 40 CFR 131 for the following reasons:

- As described in detail above, Illinois' submittal of the revised DO standards satisfies the Federal regulations minimum requirements of a complete submittal at 40 CFR 131.6; and,
- As described above, Illinois' revised DO standards are consistent with technical recommendations contained in EPA's 304(a) criteria guidance for DO (EPA's 1986 Criteria Document).

IV. EPA's REVIEW FOR COMPLIANCE WITH SECTION 7 OF THE ESA

A. EPA's Consultation Requirements Under the ESA

Consistent with section 7(a)(2) of the ESA, 16 U.S.C. §1536(a)(2), and federal regulations at 50 CFR Part 402, EPA is generally required to consult with U.S. Fish and Wildlife Service (FWS) and/or National Oceanic and Atmospheric Administrations Fisheries Service (for marine species), on EPA actions that may affect federally-listed threatened or endangered species or designated critical habitat (generally referred to as "listed species" in the remainder of this document). EPA's approval of new and revised State WQS under section 303 of the CWA is generally an action requiring consultation where such approvals may affect listed species or designated critical habitat.

B. EPA's Determination

On June 6, 2008, EPA submitted a letter to FWS requesting verification of all federally-listed species in Illinois. On December 8, 2008, EPA Region 5 received a response from FWS, dated August 29, 2008, that confirmed the list of species listed above with one addition, the pink mucket pearlymussel (*Lampsilis orbiculata*) (=*Plethobasis abrupta*).

Pursuant to the "Memorandum of Agreement between the EPA and the Services regarding enhanced coordination under the Clean Water Act and Endangered Species Act" (the MOA) governing consultation with FWS, EPA is deferring consultation on Illinois' revised DO criteria

to the National ESA Consultation. EPA has determined that this approval action does not violate section 7(d) of the ESA, which prohibits irreversible or irretrievable commitments of resources that have the effect of foreclosing the formulation or implementation of reasonable and prudent alternatives, and has included in the record the basis for the conclusion that there are not expected to be any impacts of concern during the interim period until the national consultation is completed.

V. Literature Cited

U.S. Environmental Protection Agency. 1986. Ambient water quality criteria for dissolved oxygen. EPA/440/5-86-003.